SIMBAD Overview

Amy E. Alving
Deputy Director, SPO

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Special Projects Office

Counter Emerging Threats

- Chem Bio Defense Systems
- Underground Facilities
- Missile Defense

Keep Surface Targets At Risk

- Moving, Emitting, CC&D
- Entire Kill Chain
  - –Surv-Combat ID-Engagement - BDA
- Emphasize Robustness

Critical Supporting Technologies/Systems

- Navigation
- Advanced Sensors
- Signal Processing

Chem/Bio Defense Activities

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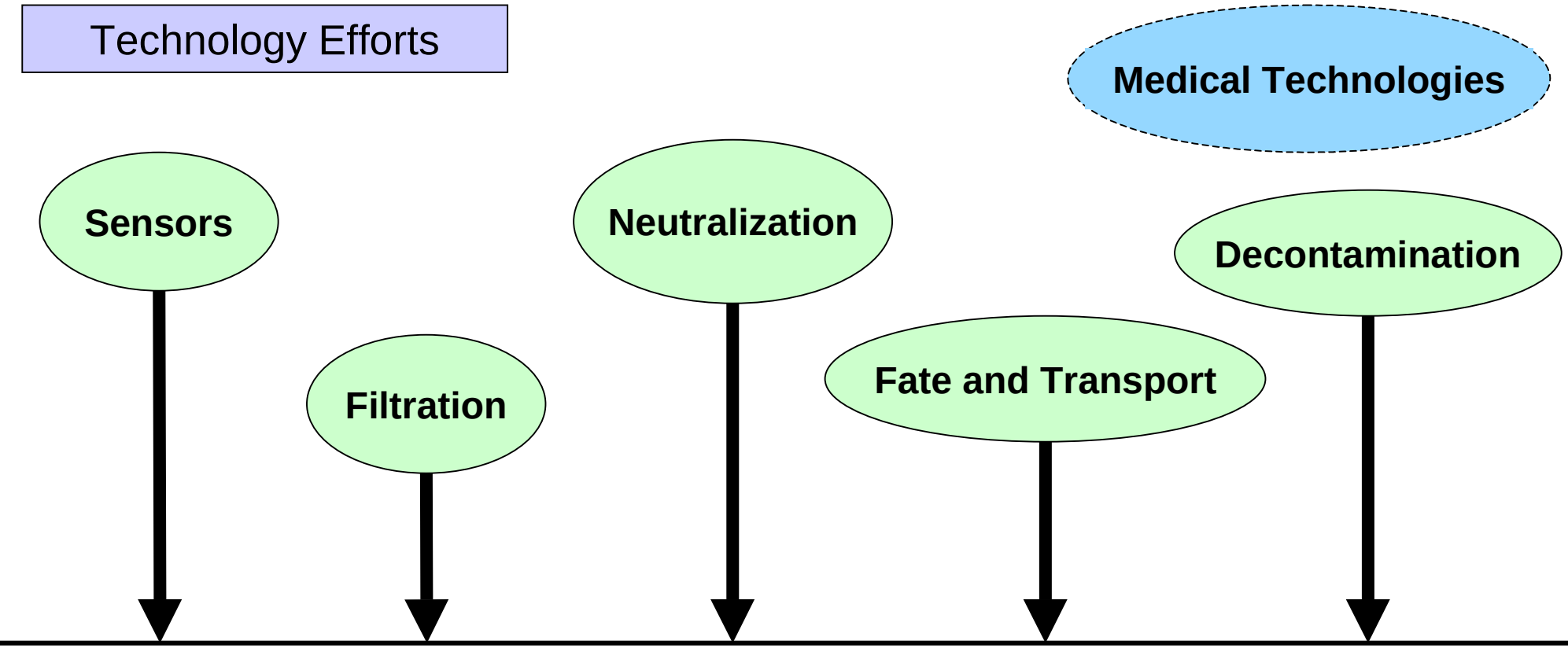
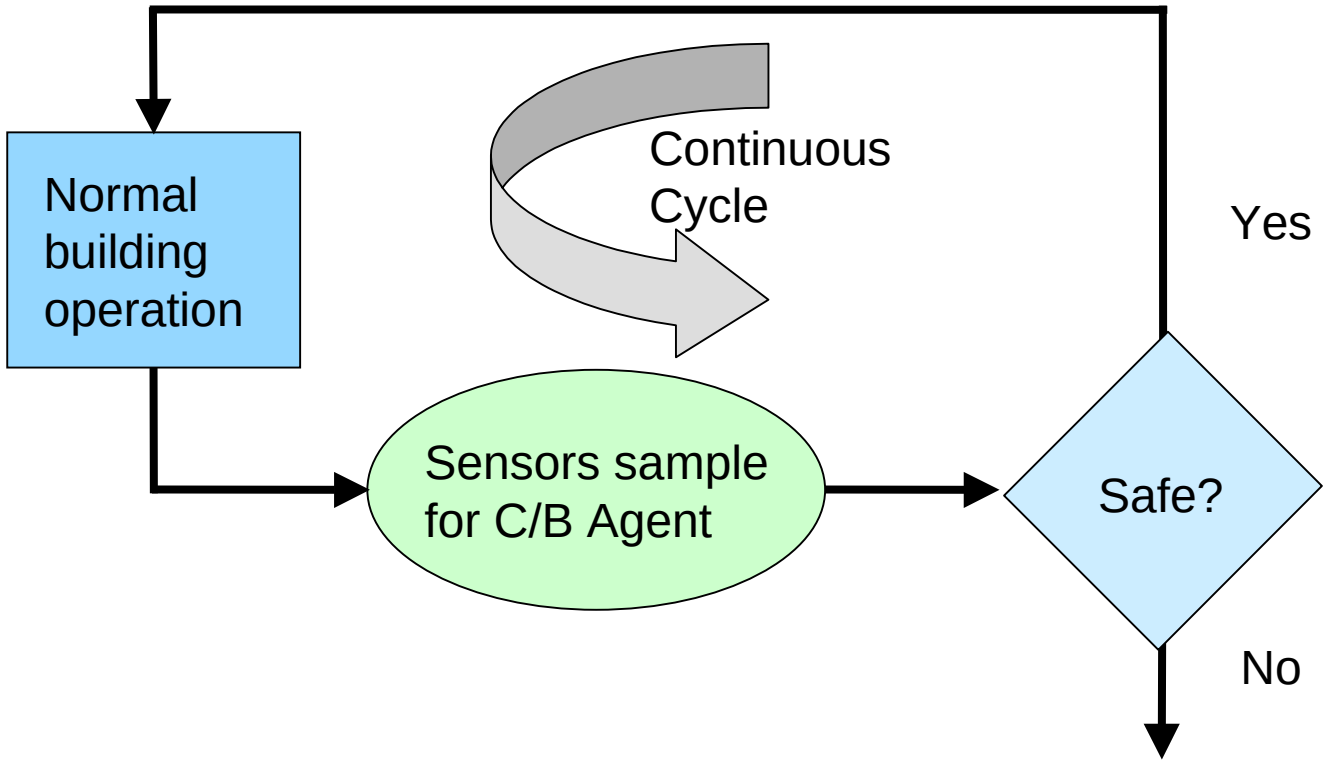
Technology Efforts



System Applications

- Protection of troops on battlefield
- Protection of ports, airfields
- Protection of buildings
- Civil Defense

*Example** Application



– Warning sounded
– People moved
– Airflow diverted
– Neutralization begun

*Sample Application Only

What is SIMBAD?

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- The purpose of SIMBAD is to produce prototype sensor systems that work. They must be:
  - well integrated;
  - optimized;
  - well characterized;
  - reliable.

- To achieve this will require a new “way of doing business”:
  - No stovepipes.
  - Broad technical expertise united under strong systems engineering.
  - End-to-end development, including modeling and characterization.

Components of (Bio) Sensors

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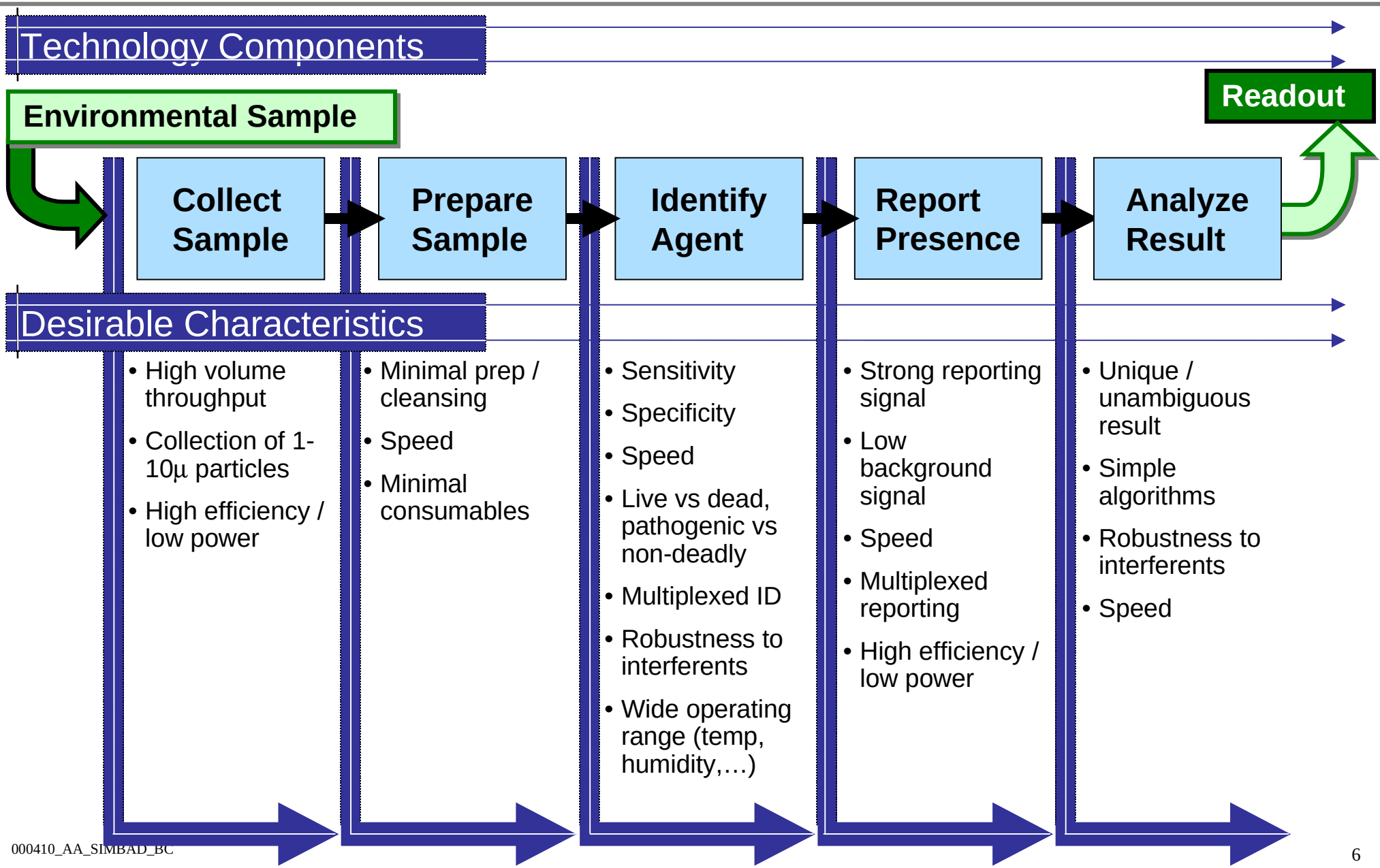
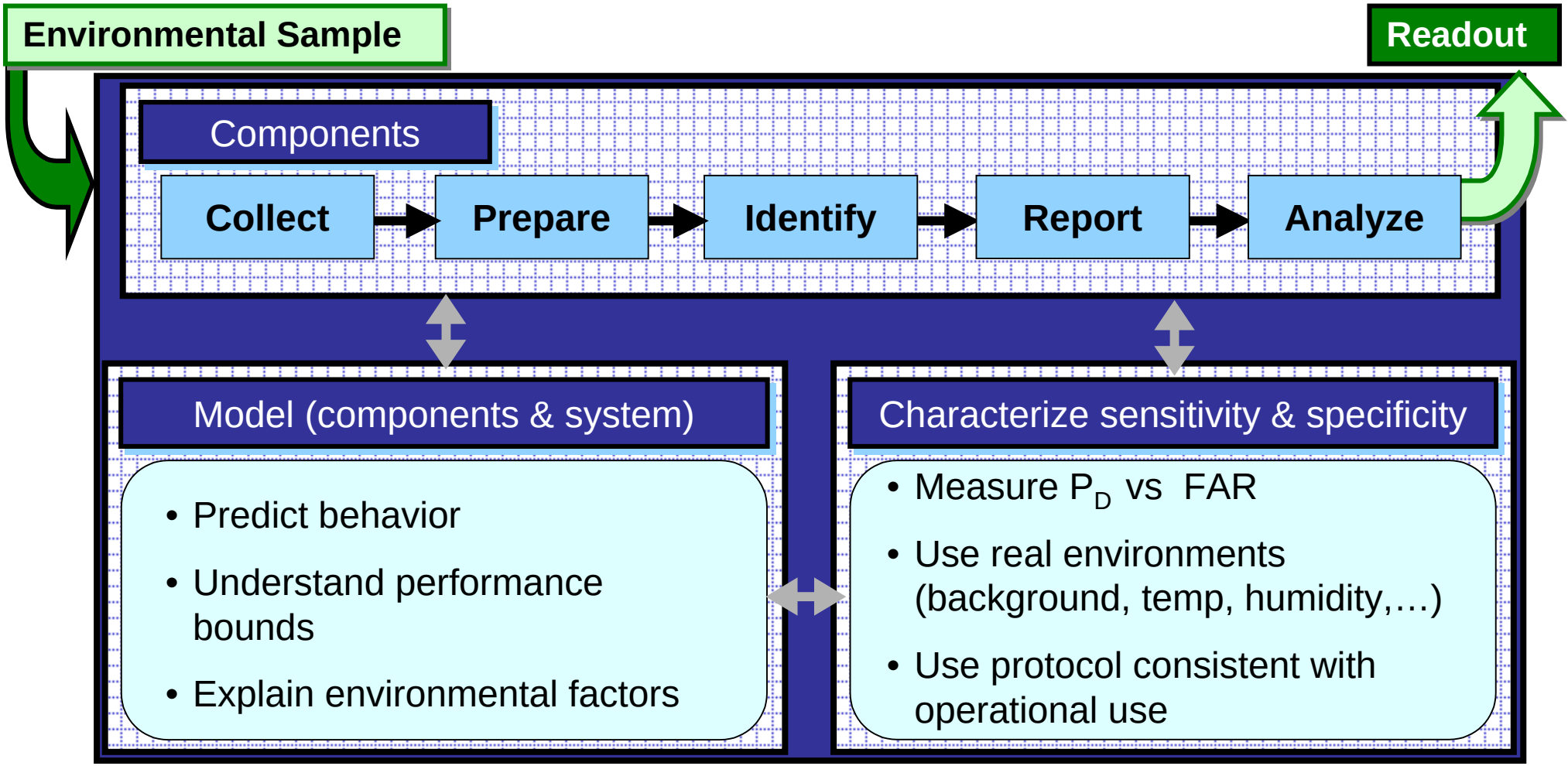
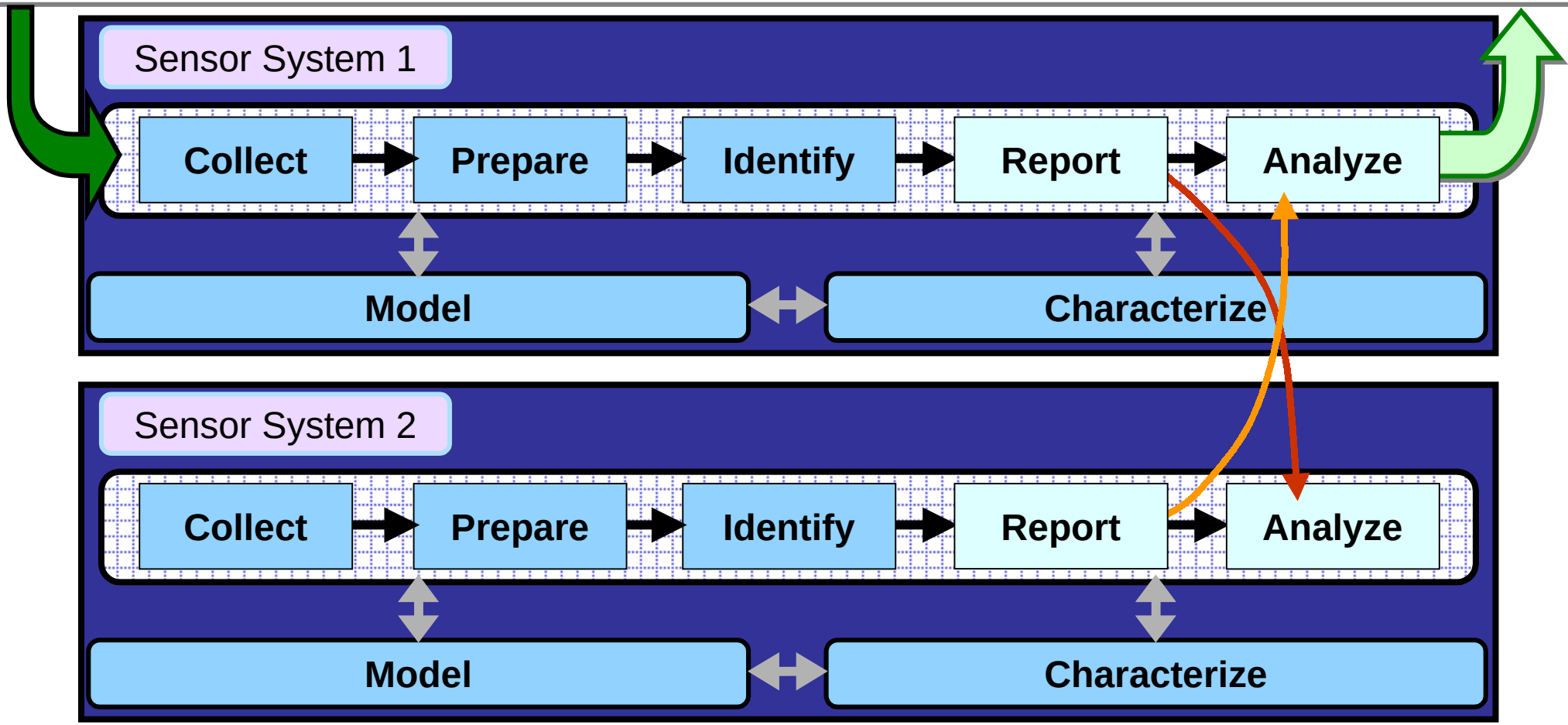


(Bio) Sensor System



- Sensor system must be optimized for end-to-end performance in specified CONOPS.
- Modeling supports component optimization, system optimization, signal processing algorithms, and characterization.

(Bio) Sensor Networks

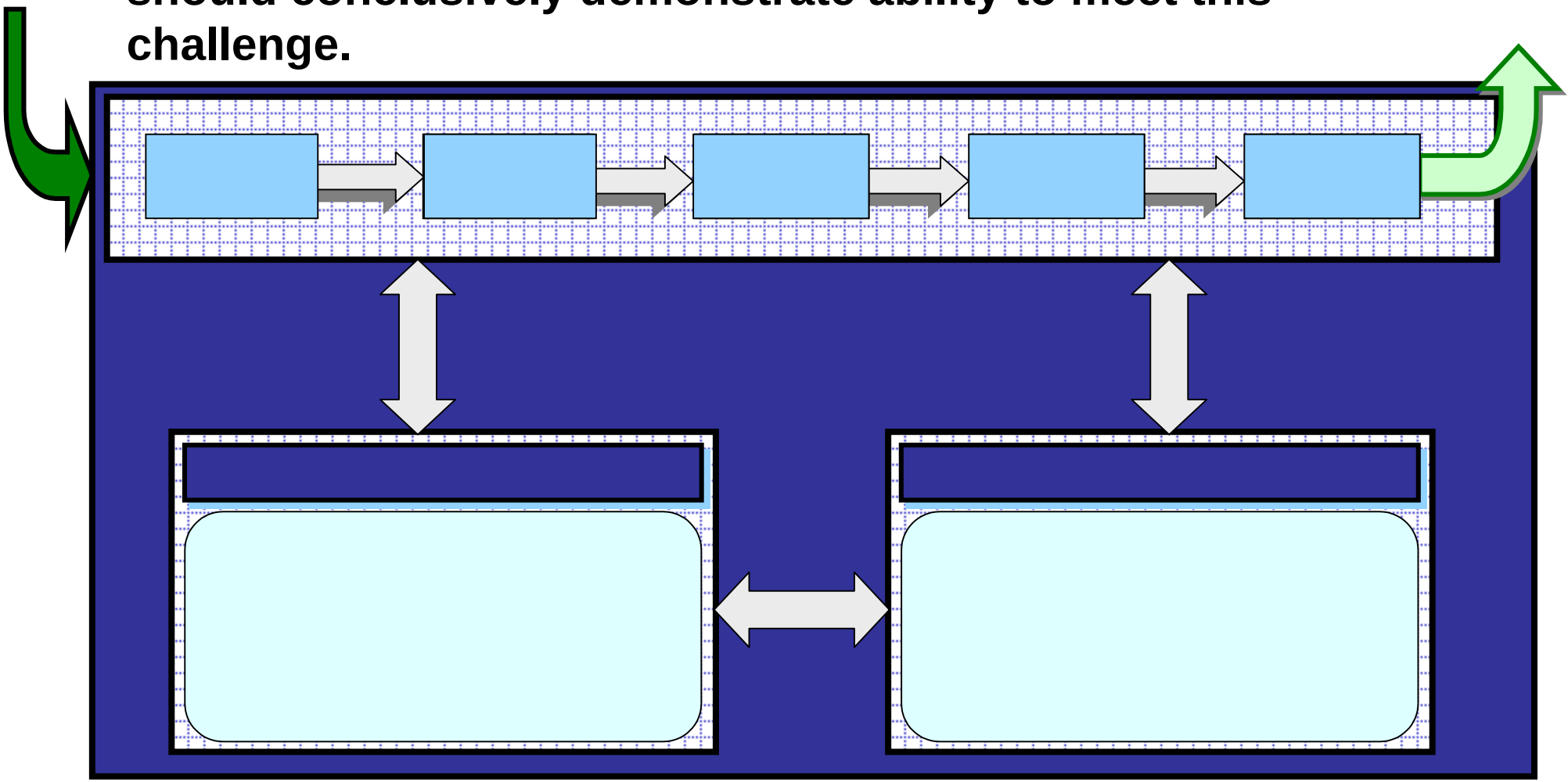


Fully characterized and modeled sensor systems support networking for:

- false-alarm reduction;
- layered response (detect vs ID);
- optimized sensor distribution.

End-to-End Integration

- System engineering and integration is KEY.
- **Proposals (discussion, work plan, teaming arrangement) should conclusively demonstrate ability to meet this challenge.**



SIMBAD Products

- The SIMBAD products are **sensor system prototypes**.
  - Integrated, optimized, characterized.

- Other activities are contributions to, *NOT* substitutes for, these prototypes:
  - Models (component and system).
  - Protocols for characterization.
  - Background/clutter characterization.
  - Performance predictions.
  - Sensor CONOPS, architectures.
  - Threat descriptions.

SIMBAD Supporting Activities

- Modeling the threat (Work Area 1)
  - What does the sensor system “see”?
- Additional technical contributors (Work Area 3)
  - “Audition” opportunity.